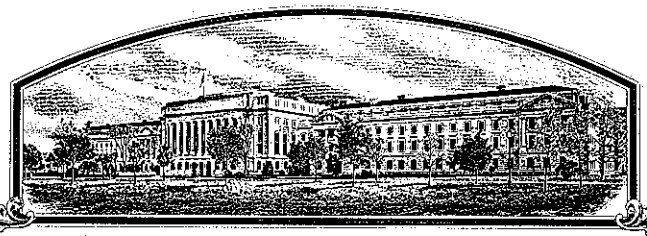


No. 9100154

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ALFALFA

'5252'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 30th *day of* April *in the year of our Lord one thousand nine hundred and* ninety-three.

Attest:

Kenneth A. Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

tary of Agriculture

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Pioneer Hi-Bred International, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
XAM93

3. VARIETY NAME
5252

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*
7305 N. W. 62nd Avenue, P.O. Box 287
Johnston, IA 50131

5. PHONE *(Include area code)*
515-270-3340

FOR OFFICIAL USE ONLY

PVPO NUMBER
9100154

FILING Date: March 27, 1991
Time: ☐ A.M. ☐ P.M.

FEES RECEIVED
Filing and Examination Fee: $2150.00
Date: March 27, 1991
Certificate Fee: $250.00
Date: Apr. 15, 1993

6. GENUS AND SPECIES NAME
Medicago sativa

7. FAMILY NAME *(Botanical)*
Leguminosae

8. CROP KIND NAME *(Common Name)*
Alfalfa

9. DATE OF DETERMINATION
August, 1989

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Iowa

12. DATE OF INCORPORATION
1926

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

William T. W. Woodward, 7305 N. W. 62nd Avenue, P. O. Box 287, Johnston, IA 50131
Mary Helen Mitchell, 700 Capital Square, 400 Locust Street, Des Moines, IA 50309
John Hintze, 700 Capital Square, 400 Locust Street, Des Moines, IA 50309
PHONE *(Include area code)*:

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

- a. ☒ Exhibit A, Origin and Breeding History of the Variety.
- b. ☒ Exhibit B, Novelty Statement.
- c. ☒ Exhibit C, Objective Description of Variety.
- d. ☒ Exhibit D, Additional Description of Variety.
- e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
- f. ☒ Seed Sample (2,500 viable untreated seeds) Date Seed Sample mailed to Plant Variety Protection Office March 13, 1991
- g. ☒ Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
☐ YES *(If "YES," answer items 16 and 17 below)* ☒ NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ FOUNDATION ☐ REGISTERED ☒ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES *(If "YES," through* ☐ Plant Variety Protection Act ☐ Patent Act Give date: _____ *)*
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ YES (If "YES," give names of countries and dates)
☒ NO Planned for U.S.A Spring, 1992

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
PIONEER HI-BRED INTERNATIONAL, INC.		
SIGNATURE OF APPLICANT *(Owner(s))* BY William T. W. Woodward	CAPACITY OR TITLE Director, Department of Alfalfa Breeding	DATE 3-12-91

EXHIBIT A

ORIGIN AND BREEDING HISTORY OF THE VARIETY

'5252'

5252 is a synthetic variety with 197 parent plants originating from an experimental line tracing to the varieties 5373 and Surpass. Parent plants were selected through phenotypic recurrent selection for resistance to Phytophthora root rot and/or Aphanomyces root rot. Germplasm sources are M. falcata (8%), Ladak (8%), M. varia (23%), Turkistan (10%), Flemish (42%), Chilean (7%), and Peruvian (2%).

During seed multiplication no variates beyond the limits defined under Exhibit C have been found. Multiplication procedures will insure that seed being sold as 5252 will not be shifted in characteristics beyond presently acceptable limits for alfalfa varieties. Syn 1 seed harvested from individual plants in "cage isolation" in 1989 is considered breeder seed.

It is confirmed that 5252 meets presently acceptable levels for uniformity for alfalfa varieties.

EXHIBIT B

NOVELTY STATEMENT

'5252'

5252 most closely resembles the variety 'Arrow'. 5252 differs from Arrow in anthracnose resistance, being classified as having resistance, while Arrow has moderate resistance to the disease.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Affidavit)

OBJECTIVE DESCRIPTION OF VARIETY
ALFALFA *(Medicago sativa* sensu Gunn et al.*)*

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Pioneer Hi-Bred International, Inc.	XAM93	5252

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
7305 N. W. 62nd Avenue, P. O. Box 287
Johnston, IA 50131

FOR OFFICIAL USE ONLY
PVPO NUMBER
9100154

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place numbers in the boxes to designate the expressions which are characteristic of the commerical generations of the application variety. Data for quantitative plant characters should be based on a minimum of 100 plants. Include leading zeros when necessary (e.g., [0][8][9]) for quantitative data. Comparative data should be determined from varieties entered in the same trial. Plant color may be precisely designated by using any recognized color chart, e.g., The Munsell Plant Tissue Color Charts.

1. WINTERHARDINESS:

[7] CLASS:
1 = Very Non-Winterhardy (CUF 101)
2 = Non-Winterhardy (Moapa 69)
3 = Intermediately Non-Winterhardy (Mesilla)
4 = Semi-Winterhardy (Lahontan)
5 = (Du Puits)
6 = Moderately Winterhardy (Saranac)
7 = (Ranger)
8 = Winterhardy (Vernal)
9 = Extremely Winterhardy (Norseman)

TEST LOCATION: Johnston, IA

2. FALL DORMANCY:

FALL DORMANCY (DETERMINED FROM SPACED PLANTINGS)

TESTING INSTITUTION AND LOCATION	DATE OF LAST CUT	DATE REGROWTH SCORED	REGROWTH SCORE OR AVERAGE HEIGHT				LSD .05
			APPLICATION VARIETY	CHECK VARIETIES*			
				Vernal	Ranger	Saranac	
Pioneer Hi-Bred International, Inc. Johnston, IA	9/14/90	10/12/90	9.9	8.4	9.7	11.8	1.4

* CUF 101, Moapa 69, Mesilla, Lahontan, Du Puits, Saranac, Ranger, Vernal, or Norseman as appropriate.

Specify scoring system used: Natural plant height measured in cm.

[7] Fall Growth Habit (Determined from Fall Dormancy Trials)
1 = Erect (CUF 101)
3 = Semierect (Mesilla)
5 = Intermediate (Saranac)
7 = Semidecumbent (Vernal)
9 = Decumbent (Norseman)

3. RECOVERY AFTER FIRST SPRING CUT (In Southwest, first cut after March 21):

[ ]
1 = Very Fast (CUF 101)
3 = Fast (Saranac)
5 = Intermediate (Ranger)
7 = Slow (Vernal)
9 = Very Slow (Norseman)

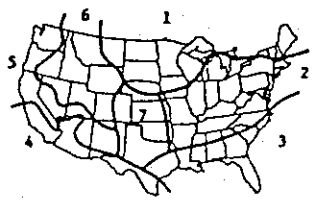
TEST LOCATION: _____

4. AREAS OF ADAPTATION IN U.S. (Where tested and proven adapted):

[1] Primary Area of Adaptation

[2] [6] Other Areas of Adaptation

1 = North Central
2 = East Central
3 = Southeast
4 = Southwest
5 = Moderately Winterhardy Intermountain
6 = Winterhardy Intermountain
7 = Great Plains
8 = Other *(Specify)* _____



5. FLOWERING DATE (When 10% of plants possess open flowers at time of first spring cut):

[ ][ ] Days Earlier Than . . . . . [ ]
Same As . . . . . [ ]
[ ][ ] Days Later Than . . . . . [ ]

1 = CUF 101
2 = Mesilla
3 = Saranac
4 = Vernal
5 = Norseman

TEST LOCATION: _____

6. PLANT COLOR (Determined from healthy regrowth 3 weeks after first spring cut, controlling leafhoppers if necessary)

☐ 1 = Very Dark Green (524) 2 = Dark Green (Vernal) 3 = Light Green (Ranger)

9100154

COLOR CHART VALUE (Specify chart used): _____

APPLICATION VARIETY: _____

VERNAL: _____

TEST LOCATION: _____

7. CROWN TYPE (Determined from spaced plantings):

☐ Noncreeping Types: 1 = Broad (Vernal) 2 = Intermediate (Saranac) 3 = Narrow (CUF 101)

Creeping Types: 4 = Creeping Rooted (Rangelander) 5 = Rhizomatous (Rhizoma)

8. FLOWER COLOR (Determine frequency of plants for each color class as defined by USDA Agriculture Handbook No. 424 (Barnes 1972), allowing all plants in plot to flower):

072	% Purple and Violet (Subclasses 1.1 to 1.4)	020	% Blue (Subclasses 2.3 and 2.4)
008	% Variegated Other Than Blue (Subclasses 2.1, 2.2, 2.5 to 2.9)	t	% Yellow (Subclasses 4.1 to 4.4)
t	% Cream (Class 3)	t	% White (Class 5)

TEST LOCATION: Johnston, IA

9. POD SHAPE (Determine frequency of plants with the following pod shapes produced on well cross-pollinated racemes):

	% Tightly Coiled (One or more coils, center more or less closed)		% Loosely Coiled (One or more coils, center conspicuously open)
	% Sickle (Less than 1 coil)		

TEST LOCATION: _____

10. PEST RESISTANCE: Provide in the appropriate column, trial data for application variety, and resistant (R) and susceptible (S) check varieties, synthetic generation tested, average severity index scores (ASI), least significant difference statistics (LSD .05), the institution in charge of test, year, and location of test, and whether test is a field or laboratory evaluation. Describe scoring system, and any test procedure which differs from standard methods proposed by Elgin (1982). Trial data from other test years or locations should be presented whenever available on a separate document as Exhibit D.
Seeds of the check varieties and germplasm lines listed below can be obtained from the USDA Field Crops Laboratory, Bldg. 001, Rm. 335, BARC-West, Beltsville, MD 20705. Although comparisons with check varieties listed below are preferred, comparisons with any appropriate check variety recommended by Elgin (1982) may be presented.

A. DISEASE RESISTANCE: DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Anthracnose, Race 1 *(Colletotrichum trifolii)*	Application R	1	40.7	Approx 300		Percent Resistant Plants 18.4	Pioneer Hi-Bred International, Inc. 1990 Johnston, IA Laboratory
	Arc (R)		65.0	"			
	Saranac AR (R)		43.1	"			
	Saranac (S)		0.0	"			
	SCORING SYSTEM: Percent surviving seedlings. Data adjusted to Arc at 65% resistant plants by Pioneer Hi-Bred International, Inc.						
Anthracnose, Race 2 *(Collectotrichum trifolii)*	Application LR	1	11.1	Approx 160		Percent Resistant Plants 14.5	Pioneer Hi-Bred International, Inc. 1990 Quarryville, PA Laboratory
	Saranac AR (R)		55.0	"			
	Arc (S)		2.4	"			
	SCORING SYSTEM: Percent surviving seedlings. Data adjusted to Saranac AR at 55% resistant plants by Pioneer Hi-Bred International, Inc.						
Bacterial Wilt *(Corynebacterium insidiosum)*	Application HR	1	55.4	Approx 175	5.94	ASI 0.98 Percent Resistant Plants 14.1	Pioneer Hi-Bred International, Inc. 1990 Arlington, WI Field
	Vernal (R)		42.0	"	4.87		
	Narragansett (S)		3.0	"	2.22		
	SCORING SYSTEM: Plants scored 7-9 (on a 1-9 scale where 9=no disease and 1=dead plant) considered resistant. Data adjusted to Vernal at 42% resistant plants by Pioneer Hi-Bred International, Inc.						
Common Leafspot *(Pseudopeziza medicaginis)*	Application						
	MSA-CW3AN3 (R)						
	Ranger (S)						
	SCORING SYSTEM:						

10. A. PEST RESISTANCE (Continued):

DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Downy Mildew *(Peronospora trifoliorum)*	Application						9100154
Isolate, if known:	Saranac (R)						
	Kanza (S)						
	SCORING SYSTEM:						
Fusarium Wilt *(Fusarium oxysporum f. medicaginis)*	Application HR	1	61.0	Approx 225	1.89	ASI 0.60 Percent Resistant Plants 14.08	University of Minnesota 1990 Rosemount, MN Field
	Agate (R) Moapa 69 (R)		54.0 76.7	" "	2.40 1.56		
	Narragansett (MR) MNCN-1 (S)		28.9 5.0	" "	3.48 4.58		
	SCORING SYSTEM: Plants scored 0 and 1 (on a 0-5 scale, where 0=no disease and 5=dead plant) considered resistant. Data adjusted to Agate at 54% resistant plants by the University of Minnesota						
Phytophthora Root Rot *(Phytophthora megasperma f. medicaginis)*	Application HR	1	52.6	Approx 225	3.30	ASI 0.59 Percent Resistant Plants 16.39	University of Minnesota 1990 St. Paul, MN Field
	Agate (R)		43.0	"	3.29		
	Saranac (S)		1.7	"	5.28		
	SCORING SYSTEM: Plants scored 1 and 2 (on a 1-6 scale, where 1=no disease and 6=dead plant) considered resistant. Data adjusted to Agate at 43% resistant plants by the University of Minnesota.						
Verticillium Wilt *(Verticillium alboatrum)*	Application HR	.1	67.0	Approx 150	2.77	ASI 0.69 Percent Resistant Plants 23.0	University of Wisconsin 1990 Madison, WI Laboratory
	Vertus (R)		40.0	"	3.13		
	Saranac (S)		11.0	"	4.51		
	SCORING SYSTEM: Plants scored 1 (on a 1-5 scale, where 1=no disease and 5=dead plant) considered resistant. Data adjusted to Vertus at 40% resistant plants by the University of Wisconsin.						
Other *(Specify)* Aphanomyces	Application HR	1	65.0	Approx 185	6.17	ASI 0.70 Percent Resistant Plants 6.0	Pioneer Hi-Bred International, Inc. 1990 Arlington, WI Laboratory
	(R) WAPH-1		50.0	"	5.56		
	(S) Saranac		2.0	"	1.68		
	SCORING SYSTEM: Plants scored 7-9 (on a 1-9 scale, where 9=no symptoms and 1=dead plant) considered resistant. Data adjusted to WAPH-1 at 50% resistant plants by Pioneer Hi-Bred International, Inc.						
Other *(Specify)*	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

B. INSECT RESISTANCE:

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT DEFOLIATION	DEFOLIATION IN PERCENT OF RESISTANT CHECK	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Alfalfa Weevil *(Hypera postica)*	Application						
	Arc (R)			100			
	Saranac (S)						
	SCORING SYSTEM:						

10. B. INSECT RESISTANCE (Continued):

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT SEEDLING SURVIVAL	NUMBER OF SEEDLINGS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Blue Alfalfa Aphid *(Acyrthosiphon kondoi)*	Application						9100154
	CUF 101 (R)						
	PA-1 (S)						
	SCORING SYSTEM:						
Pea Aphid *(Acyrthosiphon pisum)*	Application						
	Kanza (R)						
	Ranger (S)						
	SCORING SYSTEM:						
Spotted Alfalfa Aphid *(Therioaphis maculata)* *Biotype, if known:*	Application R	1	39.1	Approx 200	2.94	ASI 1.0 Percent Resistant Plants 27.7	Pioneer Hi-Bred International, Inc. 1990 Kerman, CA Laboratory
	Kanza (R)		70.0	"	4.01		
	Ranger (S)		3.5	"	1.61		
	SCORING SYSTEM: Plants scored 7-9 (on a 1-9 scale, where 9=no symptoms and 1=dead plant) considered resistant. Data adjusted to Kanza at 70% resistant plants by Pioneer Hi-Bred International, Inc.						

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Potato Leafhopper Yellowing *(Empoasca fabae)*	Application						
	MSA-CW3An3 (R)						
	Ranger (S)						
	SCORING SYSTEM:						
Other *(Specify)*	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

C. NEMATODE RESISTANCE: NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Northern Root Knot *(Meloidogyne hapla)*	Application						
	Nev. Syn. XX (R)						
	Lahontan (S)						
	SCORING SYSTEM:						

10. C. NEMATODE RESISTANCE (Continued).

NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Southern Root Knot *(Meloidogyne incognita)*	Application						9100154
	Moapa 69 (R)						
	Lahontan (S)						
	SCORING SYSTEM:						
Stem Nematode *(Ditylenchus dipsaci)*	Application LR	1	8.5	Approx 200	1.77	ASI 0.45 Percent Resistant Plants 11.4	Pioneer Hi-Bred International, Inc. 1990 Connell, WA Laboratory
	Lahontan (R)		50.0	"	3.26		
	Ranger (S)		4.3	"	1.50		
	SCORING SYSTEM: Plants scored 7-9 (on a 1-9 scale, where 9=no symptoms and 1=dead plant) considered resistant. Data adjusted to Lahontan at 50% resistant plants by Pioneer Hi-Bred International, Inc.						
Other *(Specify)*	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

11. INDICATE THE VARIETY THAT MOST CLOSELY RESEMBLES THE APPLICATION VARIETY FOR EACH OF THE FOLLOWING CHARACTERS:

CHARACTER	VARIETY	CHARACTER	VARIETY
Winterhardiness	Ranger	Plant Color	–
Recovery After 1st Cut	Ranger	Crown Type	–
Area of Adaptation	532	Combined Disease Resistance	Dart
Flowering Date	–	Combined Insect Resistance	5432

REFERENCES

Barnes, D.K. 1972. A System for Visually Classifying Alfalfa Flower Color. U.S. Dep. Agric. Handb. 424. 18 pp. (Note: Greenish cast of plate 6, A and B is an artifact of printing, actual colors a blend of yellow and white.)

Elgin, J.H., Jr., (ed.). 1982. Standard Tests to Characterize Pest Resistance in Alfalfa Cultivars. U.S. Dep. Agric. Tech. Bull. (In Press).

Gunn, C.R., W.H. Skrdla, and H.C. Spencer. 1978. Classification of Medicago sativa L. using legume characters and flower colors. U.S. Dep. Agric. Tech. Bull. 1574. 84 pp.

Munsell Color Co. 1977. Munsell Plant Tissue Color Charts. Munsell Color Co., Inc. Baltimore.

NOTE: Any additional descriptive information and supporting documentation may be provided as Exhibit D.

8

EXHIBIT D

'5252'

1. 5252 is a synthetic variety with 197 parent plants originating from an experimental line tracing to the varieties 5373 and Surpass. Parent plants were selected through phenotypic recurrent selection for resistance to Phytophthora root rot and/or Aphanomyces root rot. Germplasm sources are M. falcata (8%), Ladak (8%), M. varia (23%), Turkistan (10%), Flemish (42%), Chilean (7%), and Peruvian (2%).

2. 5252 is adapted to and intended for use in the central and northern region of the United States for hay, haylage, greenchop, and dehydration. The states in which 5252 is being tested are Iowa, Illinois, Minnesota, New York, Pennsylvania, Wisconsin, Oregon, and Washington. The variety has also been tested using experimental designation YAM93.

3. 5252 is a dormant cultivar with fall dormancy similar to Ranger. Flower color in the Syn 1 generation is approximately 72% purple and 28% variegated with traces of yellow, white, and cream. Growth habit is erect in midsummer and semi-erect in the fall.

4. 5252 has high resistance to Aphanomyces (Race 1), bacterial wilt, Fusarium wilt, Phytophthora root rot, and Verticillium wilt; resistance to anthracnose (race 1) and spotted alfalfa aphid; low resistance to anthracnose (race 2). YAM93 has not been adequately tested for pea aphid, blue alfalfa aphid or stem nematode.

5. Breeder seed (Syn 1) was produced in one year on parent plants in "cage isolation". Seed classes will be breeder, foundation (Syn 2 or Syn 3) and certified (Syn 2, Syn 3, or Syn 4). Foundation seed may be produced from breeder or foundation. The second generation foundation may be produced at the discretion of Pioneer Hi-Bred International Inc. Limitations on ages of stand will be three years and five years, respectively, for foundation seed and certified seed. Sufficient breeder and foundation seed for the projected life of the variety will be maintained by Pioneer Hi-Bred International, Inc.

6. Seed will be marketed in the spring of 1992.

7. Application for Plant Variety Protection will be made, and the certification option not will be requested.

EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

'5252'

Pioneer Hi-Bred International, Inc., Des Moines, Iowa, is the employer of the plant breeders involved in the development and evaluation of 5252. Pioneer Hi-Bred International, Inc. has the sole rights and ownership of 5252.